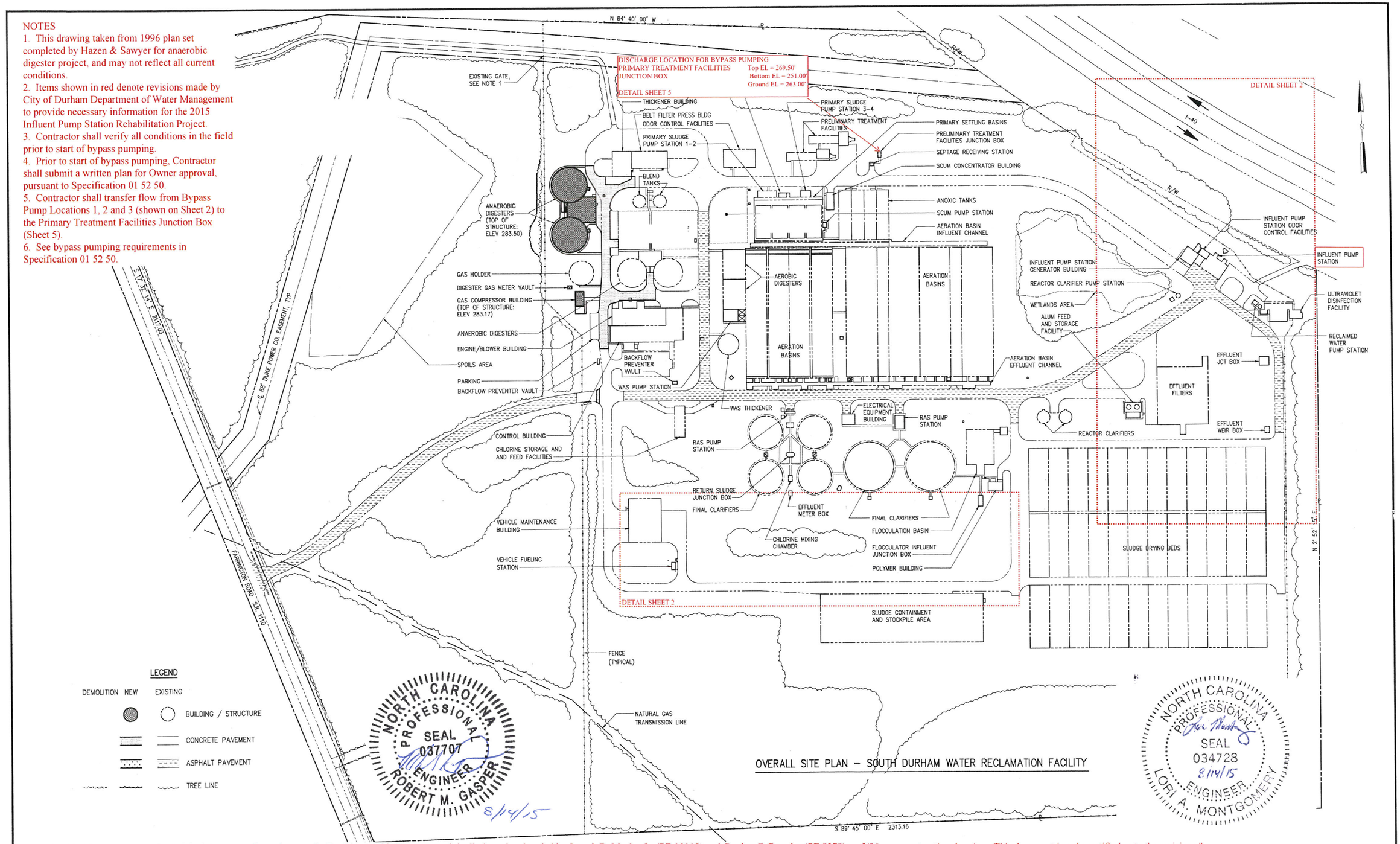
NOTES

1. This drawing taken from 1996 plan set completed by Hazen & Sawyer for anaerobic digester project, and may not reflect all current conditions.
2. Items shown in red denote revisions made by City of Durham Department of Water Management to provide necessary information for the 2015 Influent Pump Station Rehabilitation Project.
3. Contractor shall verify all conditions in the field prior to start of bypass pumping.
4. Prior to start of bypass pumping, Contractor shall submit a written plan for Owner approval, pursuant to Specification 01 52 50.
5. Contractor shall transfer flow from Bypass Pump Locations 1, 2 and 3 (shown on Sheet 2) to the Primary Treatment Facilities Junction Box (Sheet 5).
6. See bypass pumping requirements in Specification 01 52 50.



OVERALL SITE PLAN – SOUTH DURHAM WATER RECLAMATION FACILITY

NORTH CAROLINA PROFESSIONAL SEAL 037707 ENGINEER ROBERT M. GASPER 8/14/15

NORTH CAROLINA PROFESSIONAL SEAL 034728 8/14/15 ENGINEER LORI A. MONTGOMERY

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1	Issued for Bid	08/15	

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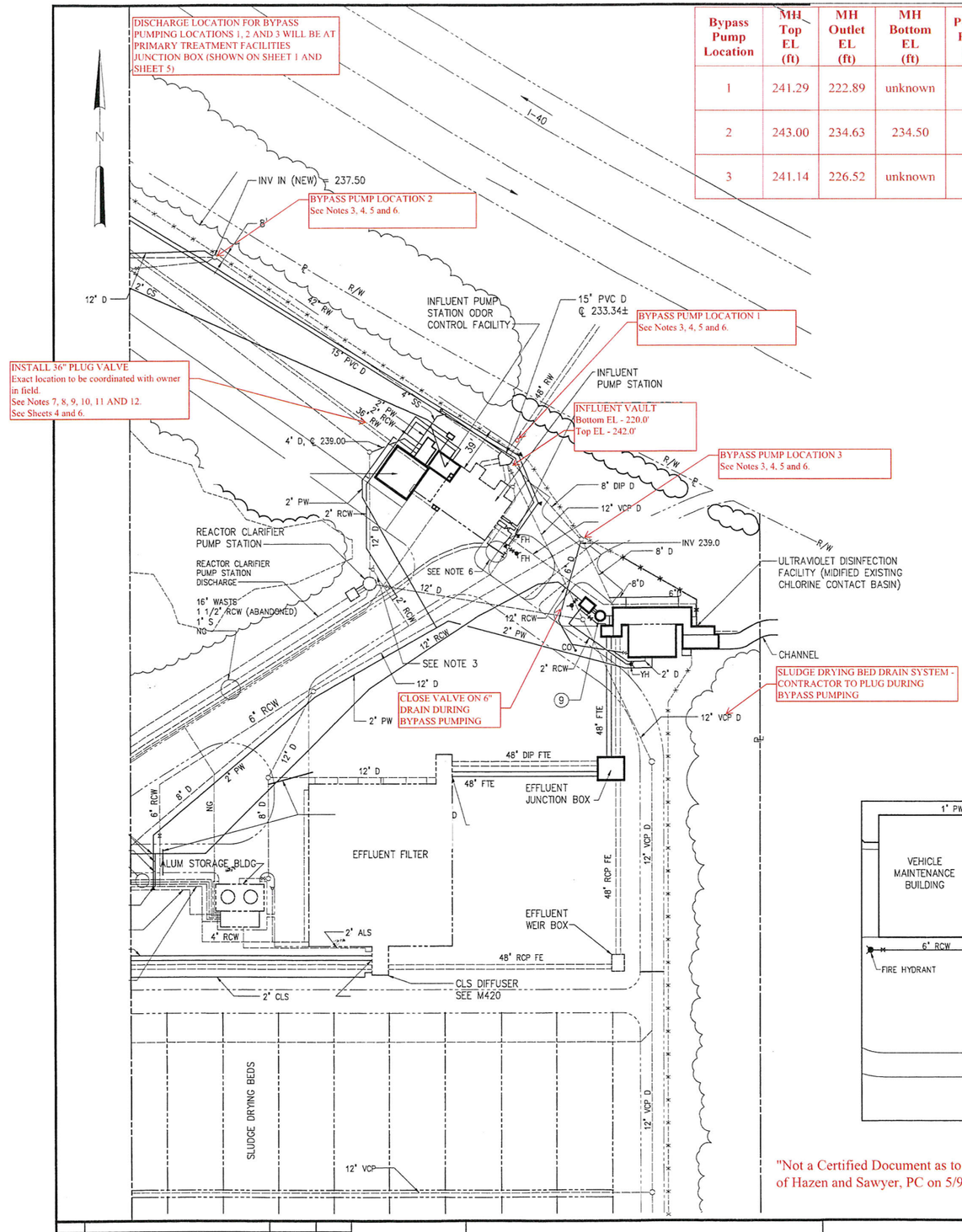
CITY OF DURHAM, NORTH CAROLINA
DEPARTMENT OF WATER RESOURCES

SDWRF INFLUENT PUMP STATION REHAB PROJECT

SOUTH DURHAM WATER RECLAMATION FACILITY
GENERAL
OVERALL SITE PLAN

Not to Scale

SHEET 1 OF 6



Bypass Pump Location	MH Top EL (ft)	MH Outlet EL (ft)	MH Bottom EL (ft)	Peak Flow Potential (MGD)	Average Flow Expected (MGD)	Maximum Water Elevation Allowed	Flow Discharge Location
1	241.29	222.89	unknown	60	7-15	226.0 ft EL	PTF Junction Box
2	243.00	234.63	234.50	4.5	0.7-1.0	No surcharging of upstream manholes/drains	PTF Junction Box
3	241.14	226.52	unknown	4.0	0.4-0.6	No surcharging of upstream manholes/drains	PTF Junction Box

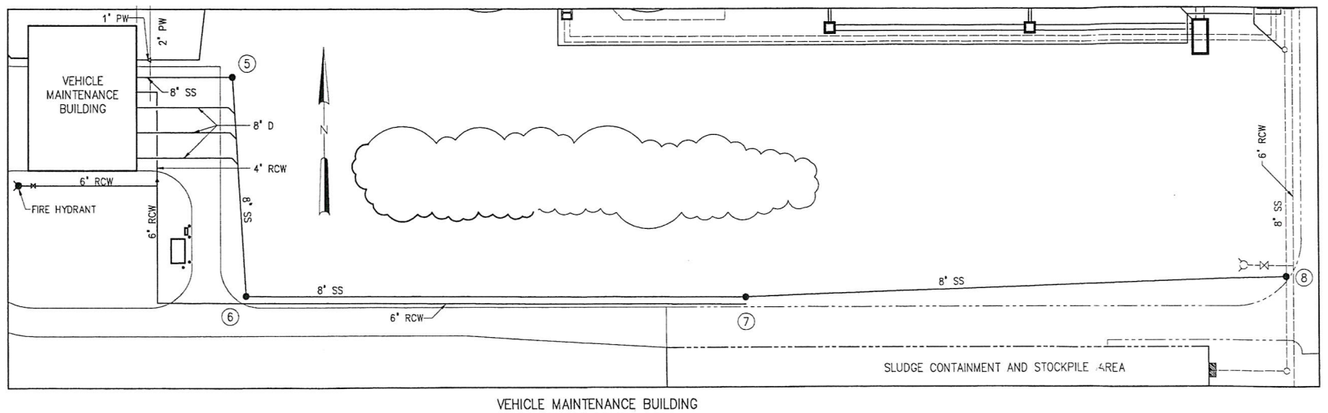
NOTES
1. This drawing taken from 1991 plan set completed by Hazen & Sawyer for plant expansion.
2. Items shown in red denote revisions made by City of Durham Department of Water Management to provide necessary information for the 2015 Influent Pump Station Rehabilitation Project.
3. Contractor shall verify all conditions in the field prior to start of bypass pumping.
4. Prior to start of bypass pumping, the Contractor shall submit a written plan for Owner approval, pursuant to Specification 01 52 50.
5. Contractor shall transfer flow from Bypass Pump Locations 1, 2 and 3 to the Primary Treatment Facilities Junction Box (See Sheets 2 and 5).
6. See bypass pumping requirements in Specification 01 52 50.
7. Contractor shall install a new 36" eccentric seating plug valve in accordance with Specification 15 10 90. 36" DIP: Center line exits pump station at EL = 234.50, Ground surface EL approx. 241.0. Force main profile shown Sheet 6.
8. 36" plug valve shall be shall be located in a 10' X 10' precast concrete vault with fully opening top, to be provided by Contractor - See Specification 03 11 48.
9. The floor of vault shall be a minimum of 18" below bottom of 36" force main pipe. Top of vault shall include a 6'X4' (minimum) aluminum watertight double leaf access door with H-20 traffic rating and sign "confined space do not enter" inside on leaf.
10. Plug valve shall be centered horizontally in vault and installed in the vertical position to provide room for future actuator installation (actuator is not included in this project). Contractor shall provide watertight seal around all pipe penetrations.
11. Contractor shall provide all miscellaneous materials and fittings to connect the valve installation to the force main.
12. Contractor shall plug 36" FM to prevent back flow from Primary Treatment Facilities Junction box during plug valve installation.

NORTH CAROLINA PROFESSIONAL SEAL 034728 ENGINEER LORI A. MONTGOMERY 8/14/15

NORTH CAROLINA PROFESSIONAL SEAL 037707 ENGINEER ROBERT M. GASPER 8/14/15

PIPING LEGEND

A	=	PROCESS AIR	PSD	=	PERFORATED STRUCTURE DRAIN
ALS	=	ALUM SOLUTION	PW	=	POTABLE WATER
CG	=	CHLORINE GAS	RAS	=	RETURN ACTIVATED SLUDGE
CLS	=	CHLORINE SOLUTION	RCW	=	RECLAIMED WATER
CS	=	CAUSTIC SOLUTION	RW	=	RAW WASTEWATER
D	=	DRAIN	S	=	SAMPLE
DPS	=	DIGESTED PRIMARY SLUDGE	SC	=	SCUM
DS	=	DIGESTED SLUDGE	SD	=	STORM DRAIN
DSU	=	DIGESTER SUPERNATANT	SDO	=	SLUDGE DRAW-OFF
DWAS	=	DIGESTED WASTE ACTIVATED SLUDGE	SPD	=	SUMP PUMP DISCHARGE
FCE	=	FINAL CLARIFIER EFFLUENT	SPR	=	SCRUBBER PUMP RECIRCULATION
FE	=	FLOCCULATOR EFFLUENT	SPS	=	SCRUBBER PUMP SUCTION
FTE	=	FILTERED TERTIARY EFFLUENT	SS	=	SANITARY SEWER
ML	=	MIXED LIQUOR SUSPENDED SOLIDS	SW	=	SEAL WATER
NG	=	NATURAL GAS	TWAS	=	THICKENED WASTE ACTIVATED SLUDGE
P	=	POLYMER	WAS	=	WASTE ACTIVATED SLUDGE
PI	=	PRIMARY INFLUENT	WASTS	=	WAS THICKENER SUPERNATANT
PS	=	PRIMARY SLUDGE			



VEHICLE MAINTENANCE BUILDING
TO SLUDGE DRYING BEDS

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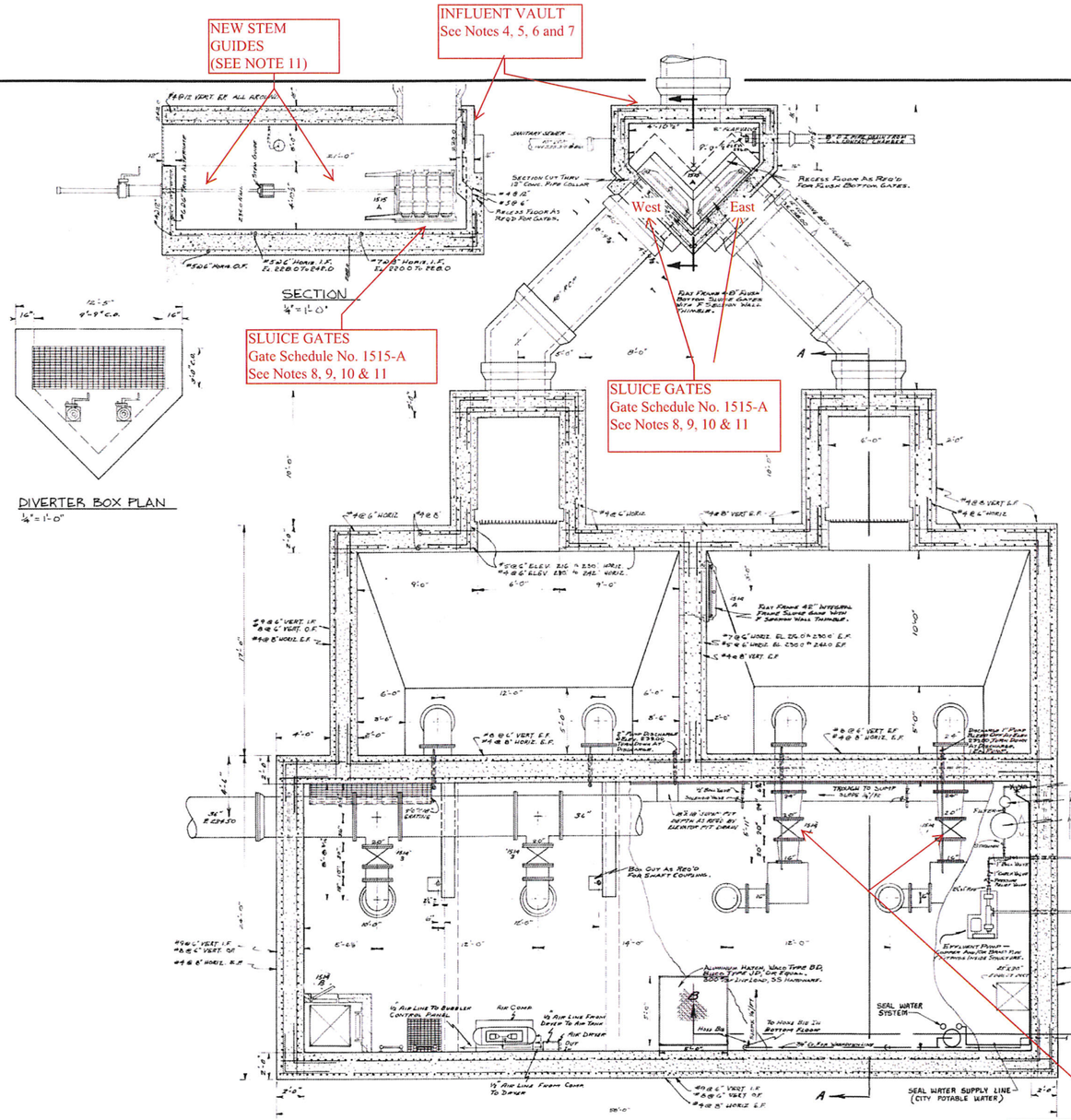
DEPARTMENT OF WATER MANAGEMENT
SDWRF INFLUENT PUMP STATION REHAB PROJECT

YARD PIPING

Not to Scale

SHEET 2 OF 6



NOTES

1. This drawing taken from 1981 plan set completed by W.M. Piatt and Co., and may not reflect all current conditions.
2. Contractor shall verify all conditions in the field prior to start of bypass pumping.
3. Items shown in red denote revisions made by City of Durham Department of Water Management to provide necessary information for the 2015 Influent Pump Station Rehabilitation Project.
4. The Contractor in conjunction with the Owner, shall assess the influent vault's interior to determine the extent of deteriorated concrete to be repaired, and shall submit a written summary of repair plan for Owner's approval in accordance with Specifications 03 73 20 and 01 33 00.
5. The Contractor shall remove all damaged concrete to sound parent concrete. For bid purposes, Contractor shall assume average depth of removal to be 3" deep around entire interior of influent vault. Concrete repair will not include rebar replacement.
6. The Contractor shall provide concrete repair around interior walls of vault, to include surface preparation, application of bonding agent and rebar coating, spall repair patching, and application of high build modified amine epoxy coating, in accordance with Specification 03 73 20.
7. If demolition of influent vault lid is required for access, the Contractor shall replace with a pre-cast lid matching dimensions of existing lid.
8. The Contractor in conjunction with the Owner, shall assess the condition of both sluice gates to determine the existing condition and the appropriate course of corrective action. A written summary of condition and a plan of work to be performed shall be submitted to the Owner for approval in accordance with Specification 15 20 60 and 01 33 00. If it is determined by Contractor and Owner that only minor repairs are needed, repair price shall be negotiated under the allowance provided.
9. In the case of full replacement of one or both sluice gates, an "in-kind" replacement shall be provided in accordance with Specification 15 20 60.
10. In the case of full replacement of one or both sluice gates, a second temporary bypass pumping period will be required once all equipment and materials have been obtained.
11. The Contractor shall provide new stem guides for both sluice gates, spaced at 6 feet on center as detailed in the Specification 15 20 60. Exact location of stem guides shall be determined in the field. New stem guides shall be provided regardless of whether repair or full replacement is conducted.
12. The Contractor shall replace the four (4) existing 20" double-disc gate valves on the suction side of Influent Pumps with four (4) 20" resilient-wedge gate valves pursuant to Specification 15 10 80.

NORTH CAROLINA PROFESSIONAL SEAL 034728 ENGINEER LORI A. MONTGOMERY 8/14/15

NORTH CAROLINA PROFESSIONAL SEAL 037707 ENGINEER ROBERT M. GASPER 8/14/15

Not to Scale	DURHAM, N. C.
	FARRINGTON RD. WASTEWATER TREATMENT PLANT
	SDWRF INFLUENT PUMP STATION REHAB PROJECT
	INFLUENT PUMP STATION - PLAN
Issued for Bid 08/15	SHEET 3 OF 6

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NOTES:
1. This drawing taken from 1991 plan set completed by Hazen and Sawyer, P.C., and may not reflect all current conditions.
2. Contractor shall verify all conditions in the field prior to start of work.
3. Items shown in red denote revisions made by City of Durham Department of Water Management to provide necessary information for the 2015 Influent Pump Station Rehabilitation Project.
4. Contractor shall replace the four (4) existing 20" double-disc gate valves on the suction side of Influent Pumps with four (4) 20" resilient wedge gates valves pursuant to Specification 15 10 80.

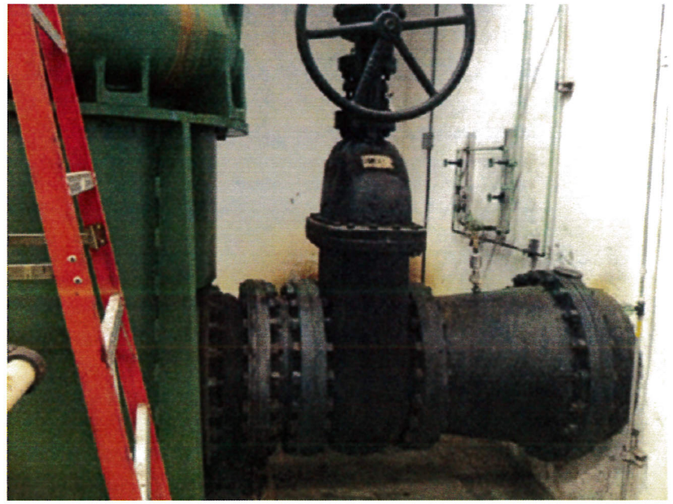
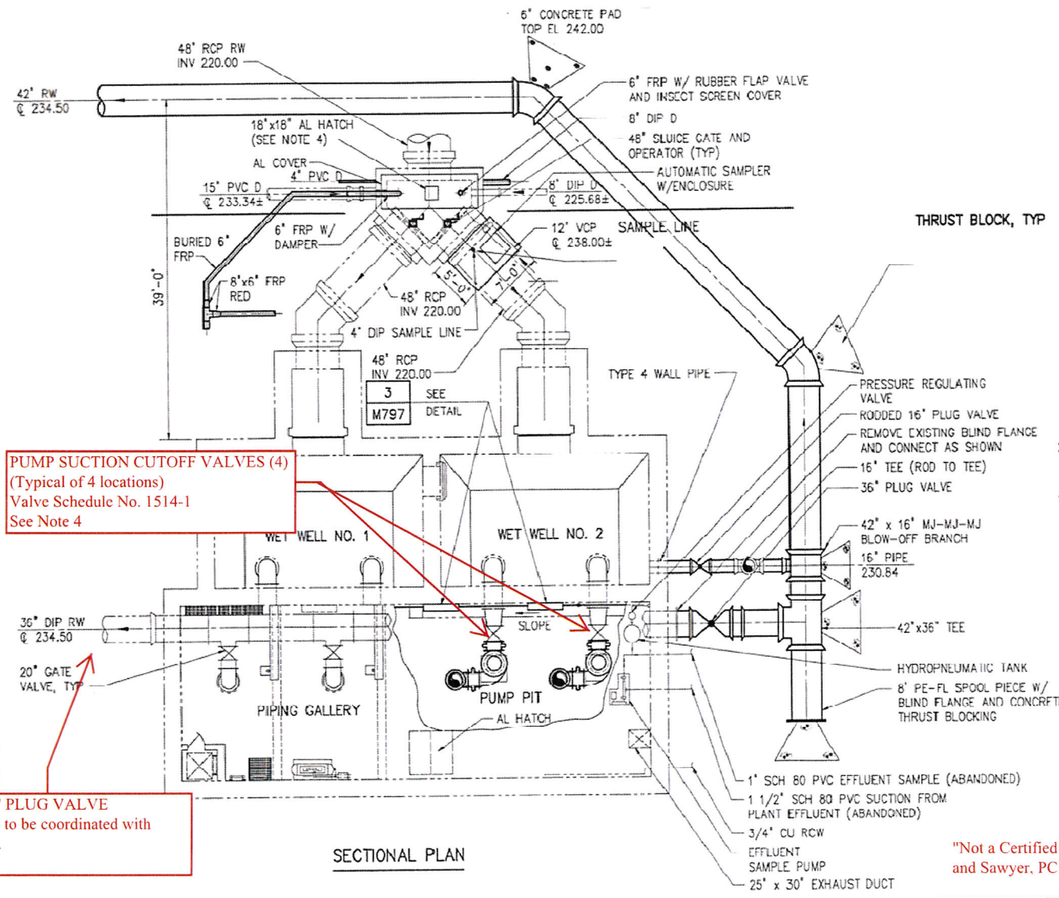


Photo 1: Side view of Valve No. 1 to be replaced. Typical of four locations.

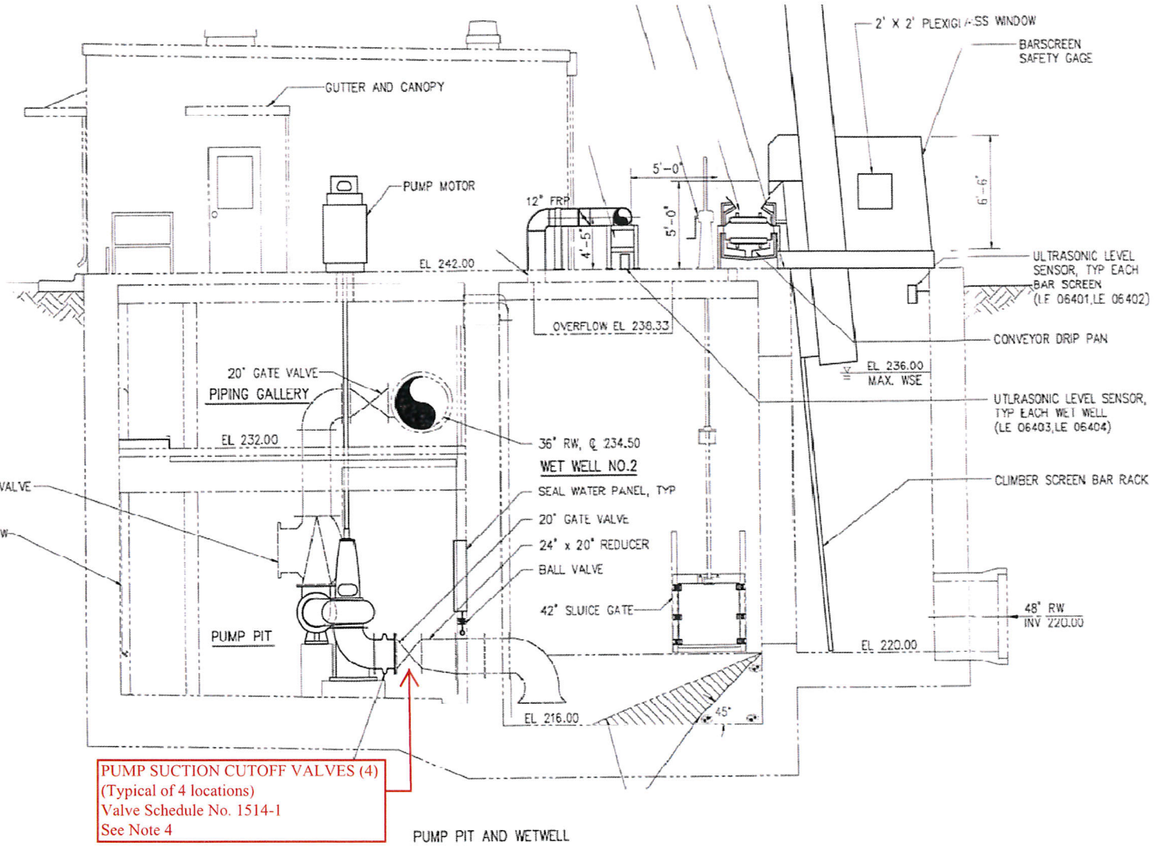
Photo 2: View of Valve No. 3 to be replaced. Typical of four locations.

NORTH CAROLINA PROFESSIONAL SEAL 034728 LORI A. MONTGOMERY ENGINEER 8/14/15

NORTH CAROLINA PROFESSIONAL SEAL 037707 ENGINEER ROBERT M. GASPER 8/14/15



SECTIONAL PLAN



PUMP PIT AND WETWELL

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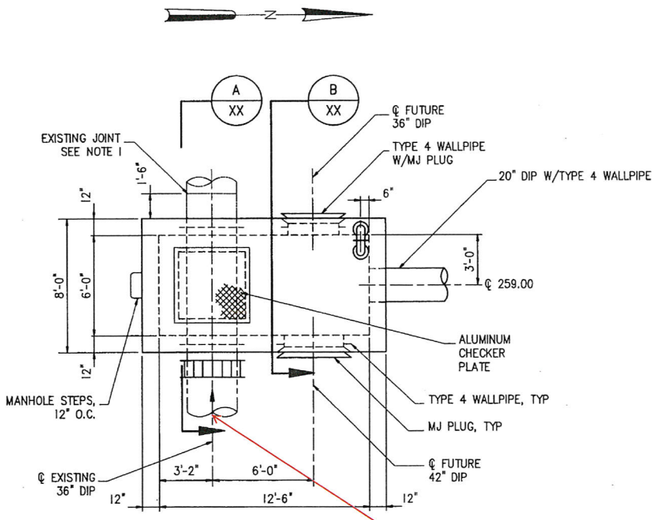
CITY OF DURHAM, NORTH CAROLINA
DEPARTMENT OF WATER MANAGEMENT

SDWRF INFLUENT PUMP STATION
REHAB PROJECT

INFLUENT PUMP STATION/
GENERATOR BUILDING
MECHANICAL
PLANS AND SECTION

Not to Scale

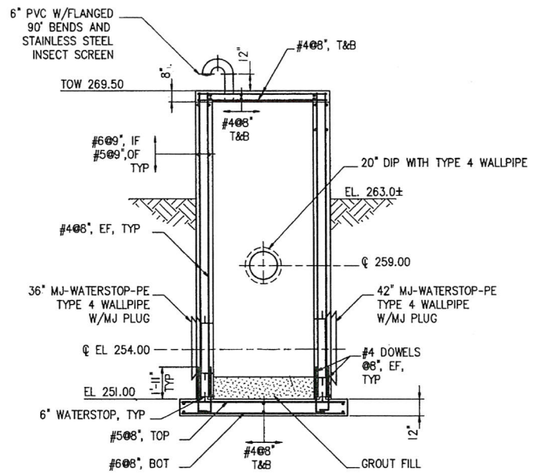
SHEET 4 OF 6



TOP PLAN

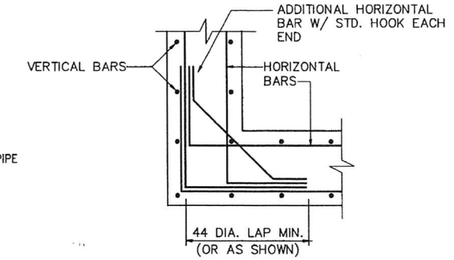
1/4"=1'-0"

CONTRACTOR SHALL PLUG 36" FORCE MAIN TO PREVENT BACKFLOW FROM PRIMARY TREATMENT FACILITIES JUNCTION BOX DURING PLUG VALVE INSTALLATION.



SECTION B / XX

1/4"=1'-0"



CORNER

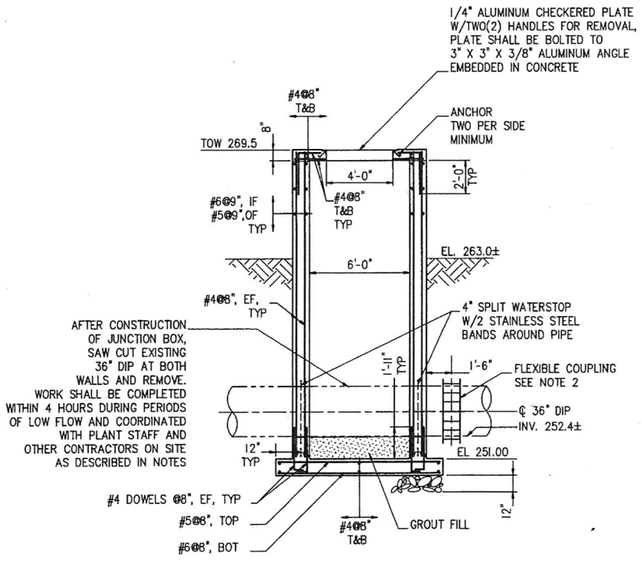
TYPICAL WALL REINFORCING

DETAIL | 1

NOT TO SCALE | XX

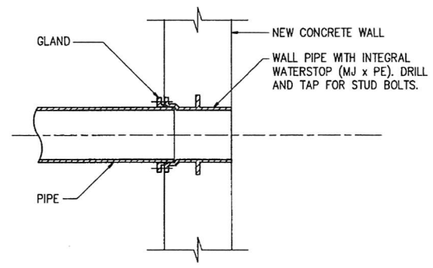
NOTES

1. This drawing was issued in 1989 for construction of the Stagecoach force main and Primary Treatment Facilities Junction Box. May not reflect all current conditions.
2. Items shown in red denote revisions made by City of Durham Department of Water Management to provided necessary information for the 2015 Influent Pump Station Rehabilitation Project.
3. Contractor shall verify all conditions in the field prior to start of bypass pumping.
4. Contractor shall transfer flow from Bypass Pump Locations 1, 2 and 3 (See Sheet 2) to the Primary Treatment Facilities Junction Box.
5. See bypass pumping requirements in Specification 01 52 50.



SECTION A / XX

1/4"=1'-0"



TYPE 4 WALLPIPE PENETRATION

DETAIL | 3

NOT TO SCALE | XX

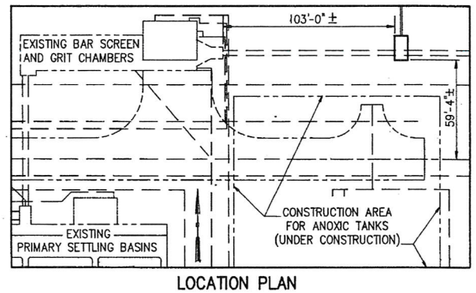
PLACE EXTRA BARS AT EACH SIDE OF OPENINGS EQUAL TO HALF THE CROSS-SECTIONAL AREA OF THE INTERRUPTED BAR (TYPICAL EACH FACE). EXCEPT WHERE NOTED OTHERWISE. PROVIDE ONE DIAGONAL BAR EACH SIDE OF OPENING, SIZE TO BE EQUAL TO MAIN REINFORCING. (TYPICAL EACH FACE)

NOTE: THIS DETAIL IS FOR OPENINGS 8"ø OR LARGER, FOR SMALLER OPENINGS, BEND BARS.

TYP. REINF. AT OPENINGS IN SLABS AND WALLS

DETAIL | 2

NOT TO SCALE | XX



LOCATION PLAN

1"=40'-0"

No: 6803

Old Index #:DD-46 (Water & Sewer)

SYSTEM	DESIGN BY:	DRAWN BY:	CONSTRUCTION DATE:	REVISIONS
WATER				
SAN. SEWER				
STM. SEWER				
STREET IMP.				

Not to Scale
Issued for Bid 08/15

CITY OF DURHAM
ENGINEERING DEPARTMENT
PRELIMINARY TREATMENT FACILITY
DISTRIBUTION BOX
FARRINGTON ROAD WASTEWATER TREATMENT PLANT

SHEET NO.: 5 of 6

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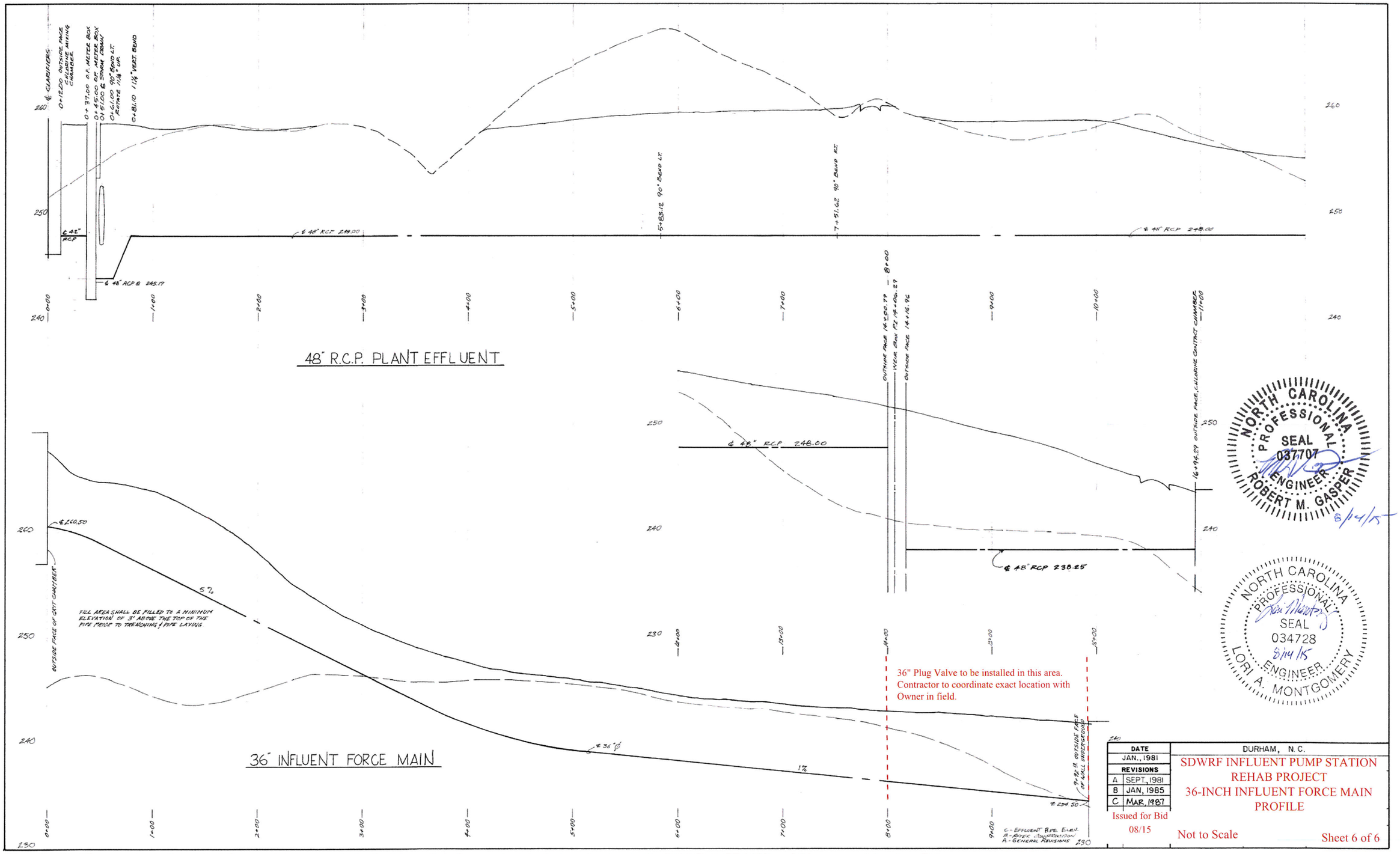

DATE
JAN., 1981
REVISIONS
A SEPT., 1981
B JAN, 1985
C MAR. 1987
Issued for Bid 08/15

DURHAM, N. C.

SDWRF INFLUENT PUMP STATION REHAB PROJECT

36-INCH INFLUENT FORCE MAIN PROFILE

Not to Scale

Sheet 6 of 6

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